

Translation

PATENT COOPERATION TREATY

PCT/JP2003/016947



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 50308716	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/016947	International filing date (day/month/year) 26 December 2003 (26.12.2003)	Priority date (day/month/year) 26 March 2003 (26.03.2003)
International Patent Classification (IPC) or national classification and IPC H01L 21/027, G03F 7/20, G21K 1/00, 5/02, H05G 1/00, H05H 1/24, H01J 35/08		
Applicant KANSAI TECHNOLOGY LICENSING ORGANIZATION CO., LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))
_____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application |

Date of submission of the demand 20 May 2004 (20.05.2004)	Date of completion of this report 18 February 2005 (18.02.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-12 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ 4, 5, 10-17 _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 3, 6-9, 18-20 _____ received by this Authority on 11 November 2004 (11.11.2004)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1-7 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. _____ 1, 2 _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	6, 7, 11-20	YES
	Claims	3-5, 8-10	NO
Inventive step (IS)	Claims	6, 7, 11-20	YES
	Claims	3-5, 8-10	NO
Industrial applicability (IA)	Claims	3-20	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP, 11-345698, A (HITACHI, LTD.), 14 December 1999

Claims 3-5, 8-10

The subject matter of claims 3-5 and 8-10 is not novel on account of document 1 cited in the ISR.

First, regarding target density, the specification gives an example of including air bubbles in a solid body, so it appears to calculate density by combining the solid body and another substance when another substance is included in the solid body.

Therefore document 1 describes a target that mixes together a gas and particles of a metal coated with a substance with lower specific gravity than the metal. Document 1 does not describe the density of this metal itself, but paragraph [0036] states that if the target is tiny particles of a metal such as gold coated with an organic substance such as polystyrene, the target's "specific gravity W is 2.85" if "the polystyrene specific gravity $w_1 = 1.05$, gold's specific gravity $w_2 = 19$, total volume $A = 1$, the volume of the nucleus substance $a_1 = 0.9$, and the volume of the substance coating the surface $a_2 = 0.1$." Given the metal's specific gravity and the target's specific gravity in this case, the density of the target in which gold is coated with polystyrene as described in document 1 appears to be within the numerical range of claim 3.

Also, document 1 the metal that forms the target is Sn, and the laser irradiating the target is a YAG laser or an excimer laser.

Furthermore, it is necessary to adjust the target density to an appropriate range in order to make the laser absorption region near the extreme ultraviolet light emission region, so it does not depend on a specific technical concept; a target whose density is adjusted to the aforesaid region would appear to have the effect of making the laser absorption region near the extreme ultraviolet light emission region. Therefore the target described in document 1 matches the structure of the target described in claim 3, so it appears to have the effect of making the laser absorption region near the extreme ultraviolet light emission region.

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Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
JP 2004-37364 A (E, X)	05.02.2004	05.07.2002	05.07.2002

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 8, 9

Dependent claims 8 and 9 cite claims 18~20 respectively, but drafting a dependent claim that cites a claim following the dependent claim is not permitted based on Format 9 Comment 10 as set forth in Article 18, Paragraph 2 of the Implementation Rules for International Applications based on the Patent Cooperation Treaty.

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 3, 15, 16

The crystal density of a heavy metal or a heavy metal compound, in addition to the crystal density of an ordinary solid body, is a crystal density that can change according to the manufacturing method, so the definition of crystal density of a heavy metal or a heavy metal compound that is based on the numerical ranges for "heavy metal density" or "heavy metal compound density" is unclear.

Also, regarding target density, the specification gives examples such as a frost, aerogel, air bubbles in a solid body, etc. Compared to a frost or aerogel, it is difficult to believe that something that has air bubbles in a solid body has a density that is greatly reduced. Therefore it is unclear if "heavy metal density" or "heavy metal compound density" is crystal density or, in the case of air bubbles included in a solid body, if the volume or density of the air bubbles are a factor in calculating "heavy metal density" or "heavy metal compound density."